



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/417,332	10/13/1999	ROBERT BEDICHEK	TRANS09	7303

7590 05/10/2004

Wagner Murabito & Hao LLP
Two North Market Street
Third Floor
San Jose, CA 95113

EXAMINER

ELLIS, RICHARD L

ART UNIT	PAPER NUMBER
----------	--------------

2183

DATE MAILED: 05/10/2004

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/417,332

Applicant(s)

BEDICHEK ET AL.

Examiner

Richard Ellis

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. Claims 1-20 are presented for examination. Claims 10-13 are withdrawn as being directed to a non-elected invention.
2. It is noted that applicant's amendment fails to comply with the revised rules of 37 CFR 1.121 which became effective July 30, 2003, over eight months ago. The following errors exist in applicant's submitted amendment:

Claims 2, 4-7, and 9-20 utilize an incorrect parenthetical expression (see (A) (1) in attached flyer).

The full text of claims 10-13 has not been provided (see (A) (1) second sentence in flyer).

Claim 15 has had all but it's first line deleted, without showing such deletion using strikethrough (see (A) (2) in flyer).

Applicant is encouraged to closely scrutinize the attached office flyer which details in summary form the current amendment formatting requirements, and to assure that all future amendments comply with the rules.

3. Claim 14 is rejected under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is upheld from the prior office action, paper number 8, mailed 2/13/2004.

Applicant's arguments would have been convincing for claim 15, had claim 15 been resubmitted with the text that claim 15 contained at the time of the last office action. The cited paragraph of the specification referenced by applicant does indicate that the decision to translate target instructions into host instructions is make speculatively based upon likelihood of a branch being taken (which was the text of claim 15 before this amendment). However, in regards to claim 14, that claim states that the exception recited in the third clause of claim 1 (the parent of claim 14) is the result of speculative execution of a branch instruction of the target instruction. The paragraph of the specification cited by applicant in support of claim 14

does not indicate in any way that this exception is generated because of "speculative execution of a branch". The cited paragraph states what was indicated above, that the decision as to selection of a block as a "superblock" and therefore suitable for translation may be speculatively made based on branch taken counts. But it in no way says that the exception is generated because of speculative execution of branch instructions. The pertinent portion of the cited paragraph is:

"By utilizing these statistics, a particular sequence of instructions may be speculatively considered to be a super-block after being executed a significant number of times.

...
If the speculation turns out to be true, the significant time is saved in processing the instructions. If not, the operation causes an exception which returns the code morphing software to the interpreter." (applicant's response, paper number 12, received April 16, 2004)

As seen from this portion of the text, the "speculation" relates to the selection of a sequence of instructions as a "super-block". I.e., the system is guessing that a sequence may be a "super block" before it in fact is sure that the sequence is a "super-block". Consequently, the last two sentence, which relate to generation of the exception, says that if the speculation turns out to be incorrect, then an exception is generated. So generation of the exception, at least as supported by this section of the specification, is in response to the guess of a sequence being a "super-block" in fact being incorrect, and not because a branch was executed speculatively. Accordingly, the rejection for lack of enablement is maintained.

4. Claim 14 rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection is also maintained for the same reasons presented, supra.
5. The amendment filed December 18, 2003 is objected to under 35 USC § 132 because it introduces new matter into the specification. 35 USC § 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the entire contents of new claims 14 and 15, as detailed above. As applicant's amendment of April 16, 2004 failed to cancel the new

matter, the new matter objection is also maintained.

Applicant is required to cancel the new matter in the response to this Office action.

6. The drawings are objected to under 37 CFR § 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the exception generation from speculative execution of a branch instruction must be shown or the feature canceled from the claim. No new matter should be entered.

7. Claim 15 is rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15, as presently amended, reads exactly:

"15. (previously added) The method of Claim 1,"

There is no body provided for claim 15, the claim is incomplete. It is also noted that if applicant wishes to amend claim 15 in response to this action to reinsert the missing text, that such amendment must follow the rules detailed above and in the attached office flyer. I.e., the claim must use the parenthetical (currently amended) and all new text must be underlined. The new text must be underlined because applicant's submission replaced all previous copies of claim 15, so the only current copy of claim 15 is the one present in this amendment, which it itself incomplete. And changes to restore the missing text will therefore be a change from the current version of the claim, and as such must be shown with underlining.

- 7.1. The scope of meaning of the following terms are unclear:

- 7.1.1. "a branch of target instructions" claim 17; This rejection is also maintained because applicant failed to correct the language of the claim and failed to address any arguments to this particular claim as to why the language is not indefinite as written.

8. The following is a quotation of the appropriate paragraphs of 35 USC § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the

invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. The following is a quotation of 35 USC § 103 which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(c) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

10. This application currently names joint inventors. In considering patentability of the claims under 35 USC § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 USC § 102(f) or (g) prior art under 35 USC § 103.

11. Claims 1, 3, 8-9, and 14-15 are rejected under 35 USC § 102(e) as being clearly anticipated by Babaian et al., U.S. Patent Application Publication US2002/0,092,002 A1.

Babaian et al. was cited as a prior art reference in paper number 4, mailed May 13, 2003.

Babaian et al. taught (e.g. see figs. 1-5) the invention as claimed (as per claim 1), including a data processing ("DP") system comprising:

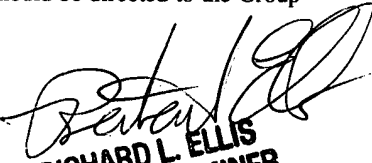
- 11.1. a method for executing a target application on a host processor ([0003]) comprising:
- 11.2. translating into host instructions each of a sequence of target instructions ([0012]);
- 11.3. storing the translated host instructions (claim 34, second clause), executing the stored host instructions (claim 34, fourth clause); and,
- 11.4. responding to an exception during execution of a stored translated instruction by rolling back to a previous point in execution at which correct state of a target processor is known (claim 20, clause c); and,
- 11.5. interpreting each target instruction in order from the point in execution at which correct state of a target processor is known (claim 20, clause c).

12. As to claims 3 and 8, they do not teach or define above the invention claimed in claim 1 and are therefore rejected under Babaian et al. for the same reasons set fourth in the rejection of claim 1, supra.

13. As to claim 9, Babaian et al. taught that the means for interpreting was an interpreter software executing on the host processor (claim 20, clause c) and the means for translating was dynamic translation software executing on the host processor ([0026]).
14. As to claim 14, Babaian et al. taught that the exception resulted from speculative execution of a branch instruction of the target application ([0010], [0013]).
15. As to claim 15, Babaian et al. clearly taught the invention claimed by an empty claim.
16. Claims 2, 4-7, and 16-20 are rejected under 35 USC § 103 as being unpatentable over Babaian et al., in view of Lethin et al., U.S. Patent 6,463,582.
Lethin et al. was cited as a prior art reference in paper number 4, mailed May 13, 2003.
17. As to claims 2, 4, 16, 19, Babaian et al. did not teach collecting statistics regarding the execution of sequences of target instructions which are executed. However, Lethin et al. taught collection of statistics relating to the number of times a particular code block was executed (col. 5, lines 9-21).
18. As to claims 5-6, 17, Babaian et al. in view of Lethin et al. taught that the statistics included the number of times a branch of [sic] target instructions have executed or the number of times a sequence has executed (Lethin et al. at col. 5 lines 10-12 and 23-26).
19. As to claim 7, Babaian et al. in view of Lethin et al. taught that the statistics include the likelihood of a branch being taken (Lethin et al. at col. 1 lines 6-20).
20. As to claims 18, and 20, Babaian et al. in view of Lethin et al. taught speculatively translating target instructions into host instructions based on a likelihood of a branch being taken (Lethin et al. at col. 5 lines 20-29). As this claim is best understood, considering that applicant has no support for the literal aspect claimed, the speculative translation is being interpreted as that defined at pg. 14 lines 1-4 of the specification where "speculative" simply means that the block of instructions is considered as a candidate for translation. When using this definition, Lethin et al. is considering the block as a candidate for translation due to it's statistics increasing past some threshold (col. 5 lines 9-29 and col. 20 lines 21-59).

21. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined the teachings of Lethin et al. into the system of Babaian et al. because of Lethin et al.'s teaching that using a statistics gathering system to count the number of times a particular target segment of code is executed allows for translation of those segments that are executed often (col. 20 lines 30-31) while preventing overloading or underloading of the translation system at the same time (col. 20 lines 36-56).
22. Applicant's arguments with respect to claims 1-9, 14-20 have been considered but are deemed to be moot in view of the new grounds of rejection.
23. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) days from the mail date of this letter. Failure to respond within the period for response will result in **ABANDONMENT** of the application (see 35 USC 133, MPEP 710.02, 710.02(b)).
24. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Richard Ellis whose telephone number is (703) 305-9690. The Examiner can normally be reached on Monday through Thursday from 7am to 5pm.
- If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Eddie Chan, can be reached on (703) 305-9712. The fax phone number for the USPTO is: (703)872-9306.
- Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Richard Ellis
May 6, 2004


RICHARD L. ELLIS
PRIMARY EXAMINER